Key Management Center 〉〉

The Key Management Center (KMC) is a specialized product developed for rail transit systems, dedicated to managing communication keys between ETCS entities (ERTMS/ETCS on-board equipment and RBCs). It enables full lifecycle management of the cryptographic keys, strictly isolates keys between production and training environments, and complies with SUBSET-114 KMC-ETCS Entity Offline KM FIS to achieve offline key synchronization for trackside and on-board equipment. It is applicable to ETCS systems in high-speed railways, intercity railways and conventional railways.

》System Functions

● Trackside & On-board Equipment Management

◎ Full Lifecycle Device Management

Provides comprehensive support for the entire device management workflow, including the addition and removal of devices, as well as seamless batch import/export of data, meeting large-scale operational needs.

◎ Secure Key Operations

Facilitates the installation of keys and updates, as well as one-click deletion of all keys, ensuring full control throughout the key lifecycle.

◎ End-to-End Management

Manages the complete lifecycle of transport and authentication keys - from generation and distribution to expiration - ensuring compliance throughout the entire enclosed process.

● Key Management

◎ Comprehensive Key Operational Coverage

Supports key generation, renewal, and deletion, while providing real-time monitoring of key status (e.g., activation, validity, expiration, etc.) enabling dynamic key management.

◎ Secure Key Import/Export Functionality

Leverages integrity verification mechanisms, such as hash checks, to prevent tampering or leakage during key transmission.


Tel: +86(10)-58981000
Email: railinfo@hollysys.com
Web: www.hollysys.com
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◎ **Isolated Key Environments**

Strictly isolates the key systems of the production and simulation environments, preventing operational key security from being affected by simulations.

◎ **Streamlined Process Control for Key Operations**

Utilizes built-in, standardized workflows to govern the key management process - from request and approval to execution - ensuring full traceability for every operation.
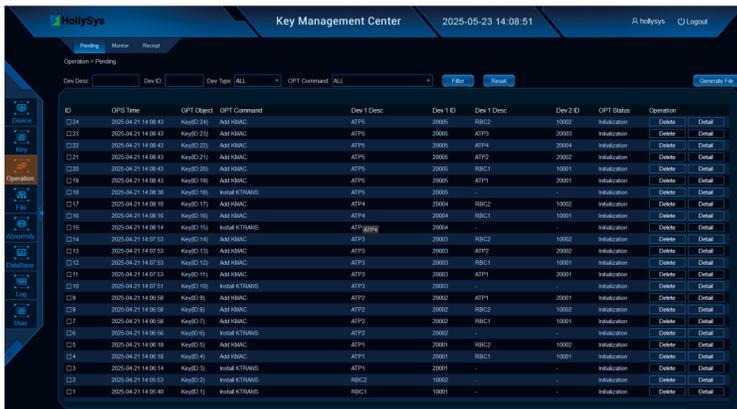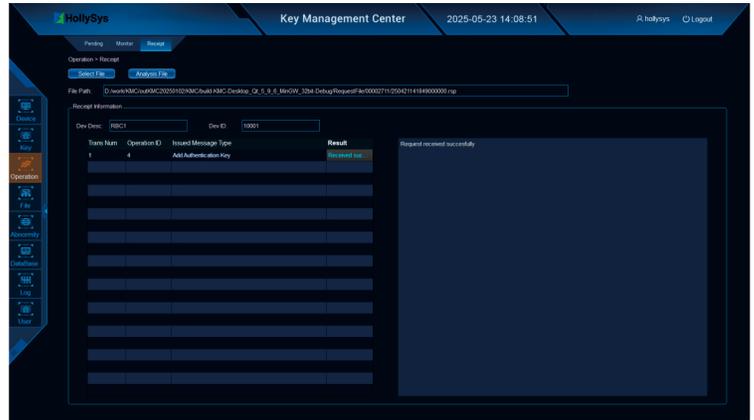
● **Comprehensive Key Status Monitoring Across Full Lifecycle**

◎ **Real-Time Key Operation Monitoring & Visualization**

Features an intuitive interface that displays the status of key generation, distribution, execution and feedback, enabling key management personnel to monitor the progress in real time.

◎ **Database with Advanced Search Capabilities**

Supports multi-criteria advanced search and filtering (e.g., by device ID, operation time, device type) enabling key management personnel to quickly locate key installation confirmation records to improve query efficiency.

◎ **Automatic Abnormal Detection in Key Management**

Employs advanced algorithms to continuously monitor key status and operations, automatically identifying risky behaviors.

◎ **Real-time Alerting for Key & Operation Anomalies**

Generates instant alerts upon detecting issues, such as key expiration or operation timeout, drastically reducing response times of potential faults.
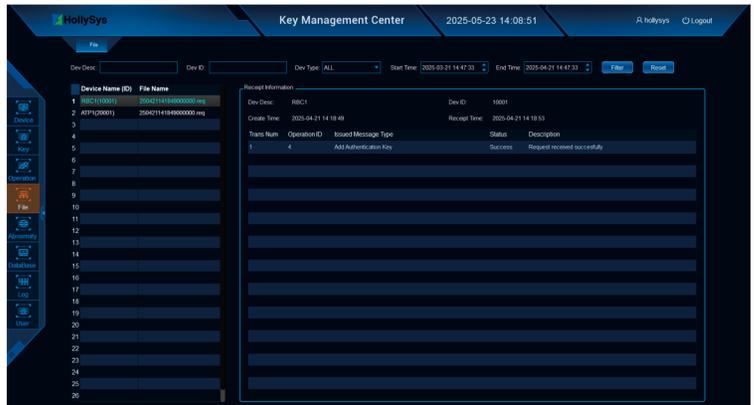
» Features

🔒 **Key Operation Compliance Auditing**

⚙ **Proactive Alerting for Keys and Operations**

⚙ **Strict Key Isolation between Production and Simulation Environments**

⚙ **SUBSET-114 Compliance**

» References

HollySys provided self-developed Key Management Center to the **Passenger Rail Agency of South Africa (PRASA)** in the KwaZulu-Natal (KZN) Service Region.

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